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15 July 1964

STATEMENT of Initial OBJECTIVES
CODIB

Ad Hoc Problem Group VI

Research and Development

I. Problem Group Objective

To develop a Community coordinated Research and Development Program in the general field of non-numerical data processing, including automatic input devices, ^{as} associative memories, machine translation and other specific EDP areas for application in intelligence information processing operations.

II. In~~IT/AD~~ Problem Parameters

A. Scope

1. The program is to include both internal and sponsored external Research and Development ^{on} systems, techniques, and equipment with potential to improve information processing operations in the Intelligence Community.
2. Information processing, on all forms, sources, subjects, and languages of recognized importance to intelligence to be taken into consideration.
3. Both hardware and software fall within scope of the program including indexing techniques, file organization, intelligence oriented machine programming, non-machine communication, communication degarbling techniques, automatic abstracting, file conversion, file organization, trends analysis, language translation, content addressing, and associated memories as well as electronic display equipment

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remote input/output stations, character sensing devices, etc.

GROUP 1
Excluded from automatic
downgrading and
declassification

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4. Techniques and means to facilitate the training of Community personnel in the newly developed equipment and techniques to be considered within the scope of the program.
5. Techniques and means for the introduction and testing of Research and Development results in the Community are within the scope of the program.
6. The controlled and qualified monitorship of sponsored external Research and Development is to be an aspect of the Community program.

B. Characteristics of the Coordinated R & D Program

1. Program will take into account the full range of intelligence interests and needs.
2. Program will provide for indications of R & D priorities within and between projects.
3. Program will provide for reporting to the Community of overlap as well as gaps in the sponsored research and development.
4. Pertinent details of R & D sponsored outside the Community will be included in the reporting system.
5. The program will include provisions for means to determine community needs for particular R & D efforts through specification of information processing problems, and mechanisms for feeding these specs into the R & D Community.

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6. Projects should be related in some perspective to the prospective sponsor and results should be related to Community needs and interest.
7. One of the principal features of the program will be its own updating and reporting for current awareness.

C. Constraints

1. Only R & D of recognized intelligence interest to be considered.
2. Plan must account for present Departmental R & D projects and priorities.
3. Security classifications assigned to projects by sponsoring organizations will have to be observed.
4. Full advantage must be taken of non-Community sponsored R & D.
5. Relationship of reporting system to other R & D reporting systems (e.g., DDC, NSF, SIE, etc.) must be specified to avoid undesired repetition.

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III. Initial Problem Group Tasks

1. Obtain descriptions of all in-house and external R & D activities and projects. Descriptions to contain roughly the same elements as are on the Scientific Information Exchange (SIE) form ADP/RD-1. Descriptions should carry [REDACTED] whatever security classification is required to fully describe the project and the particular intelligence processing needs addressed by the efforts.
2. Categorize and summarize present activities and projects by area of processing interest.
3. Solicit statements of R & D needs from each agency and consolidate.
4. Compare needs with present efforts for balance between problem areas.
5. Develop alternative rough configurations of a coordinated R & D program and contrast them with the aggregate of present departmental programs.
6. Postulate procedures and mechanisms for the detailed development and maintenance of a community R & D program and estimate required efforts.
7. Determine additional tasks required of the problem group.
8. Report to CODIB.

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IV. Schedule

1. Problem group members to be designated by _____
2. Initial report to CODIB to be ready by _____

V. Membership

Participants will require full security clearances and be knowledgeable of the state of the art in IP and be up to date on research and development in the field, particularly R & D under way [REDACTED] within and sponsored by USIB Agencies.

VI. Guidance

The problem groups will be under guidance of CODIB.

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for R+D Task Team.

It would appear advisable that for the "Identification and understanding of problem areas" (III A) that the R+D group look to the other ad groups for initial problem specification in their areas of concern. This would minimize the tendency for R+D to overlap or run ahead of the other ad hoc groups in their assigned areas. There will be ^{some} overlap between most of the ad hoc working groups.

however, R+D will address problems
in all of the other group areas.

In fact, R+D may represent the
solution to many problems
identified and defined by
the other ad hoc groups.

Therefore a parallel
approach represented by the
problems assigned the various
ad hoc groups must be
closely coordinated as we well
~~entering~~
find our groups ~~assembling~~

organizations were periodically asking
the same or similar questions
as they proceed growing rise
collective
to the allegation that our effort is
neither well planned or
coordinated and extremely
expensive both from our
stand point and our impact
on the ~~the~~ operating environment.

It might be well to reconsider
the "need" orientation of the R+D effort. We
still have a need to know who's doing

what in R&D that may be pertinent to encll. problems when we (the ad hoc groups) have specified them. State of the art in frontenders, auto-indexing, auto abstraction, machine translation, trend analysis, pattern recognition are still fruitful areas in which we can stipulate a requirement from the outset.

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CODIB Task Team VI
Application Area: Language Processing

Description and Scope:

By agreement this area of activity includes abstracting, indexing, extracting, and formatting functions. It does not include "machine translation" which is regarded as a separate area.

In explanation of the functions of interest it should be noted that abstracting and indexing require a high degree of human intellectual effort. Extracting is largely a clerical operation and follows specific rules. Formatting refers to the rearrangement of data according to specified patterns and is largely a machine operation.

Discussion of Problem Areas:

With reference to the kinds of problems which are involved in the various functions indicated above, the following distinctions can be made:

1. Problems of document generation.
(related to "abstracting")
2. Problems concerned with the design and detailing of clerical and machine procedures.
(related to "extracting," "formatting")
3. Problems of description or representation of natural language texts.
(related to "indexing")

Of the problem areas indicated, our estimate is that the area concerned with the representation of natural language texts is by far the most important one at this time and should receive particular attention in the further work of this committee.

Why is it important to conduct R&D on "representation of natural language texts"?

1. The problem area is a basic one. It deals with the nature of what flows in systems of interest. What are the units? Are they discrete? Are they complexes?

2. Evidences are building up that units used in present systems are not acceptable. Representations are too coarse; they do not have enough fine structure and do not provide enough discriminating power.

3. Any new insight in this area can have direct and profound effect on the design of systems and hardware. A strong case can be made that many system functions which are now in use are required only because of the deficiencies of the units now employed in the system.

4. Progress has been made in many of the disciplines which have a bearing on the problem. Work in linguistics, logic, semantic theory, computer processing, has shown pertinent and significant results in the last few years. These results should be coordinated and evaluated with respect to the representation problem.

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[REDACTED]
January 6, 1965